

Report Information  
from Dialog DataStar



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## Enhancing face recognition with location information.

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### Abstract

Knowing the location of different sensed user tokens such as a Bluetooth-enabled mobile phone or RFID **badge** helps to verify the identity of the user. Co-location of the tokens increases the confidence that the user is at a certain location whereas conflicting locations decreases this confidence. Thus location information can be used to authenticate the user. Instead of sensing user tokens via wireless communication channels, **face** detection and **recognition** can be used as well. The location of the webcam detecting the user can be fused with location information obtained from other user identity tokens. Together with the **face recognition** output, the fused location information of the sensed identity tokens results in an enhancement of the user identification process. This approach proves very accurate in terms of a reduction of the FAR and FRR of the **face recognition**, allows for more relaxed posing of the user for reasonably correct **face recognition**, and provides user– friendliness as users don't have to explicitly enter credentials anymore in order to authenticate themselves. The latter aspect makes the approach suitable for pervasive and ubiquitous computing environments.

### Descriptors

BIOMETRICS–ACCESS–CONTROL; **FACE**–RECOGNITION; IMAGE–FUSION; MESSAGE–AUTHENTICATION; UBIQUITOUS–COMPUTING.

### Classification codes

B6135E **Image**–recognition\*;  
C5260B Computer–vision–and–image–processing–techniques\*;  
C6130S Data–security;  
C5260A Sensor–fusion;  
C6150N Distributed–systems–software.

### Keywords

**face**–recognition; location–information; Bluetooth–enabled–mobile–phone; RFID; user–identity–verification; user–authentication; wireless–communication–channel; **face**–detection; image–enhancement; user–friendliness; pervasive–computing; ubiquitous–computing; image–fusion.

### Treatment codes

P Practical.

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English.

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Conference–paper.

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## Search Strategy

No.	Database	Search term	Info added since	Results
1	INZZ	(face OR facial) ADJ (recogni\$4 OR segment\$5)	unrestricted	10822
2	INZZ	barcode\$1 OR bar ADJ code\$1 OR bar-code\$1	unrestricted	2944
3	INZZ	security	unrestricted	132013
4	INZZ	badge OR badges OR tag OR tags	unrestricted	9258
5	INZZ	1 AND 4	unrestricted	12

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